

(Final)

Contribution of WWF Nepal in Rhino Conservation

A Retrospective



Submitted to:

WWF Nepal

Kathmandu, Nepal

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December 2008

Acknowledgements

The Consultant is grateful to the WWF Nepal for the opportunity given to document the "Contribution of WWF Nepal for the Conservation of Greater One-Horned Rhinoceros". He would like to extend his hearty thanks to WWF Nepal's officials Mr. Anil Manandhar, Mr. Santosh Nepal, Mr. Kanchan Thapa, Dr. Divaker Chapagain and Mr. Dhan Rai for their kind cooperation during the study. He is thankful to the officials of the Department of the National Parks and Wildlife Conservation (DNPWC) namely Dr. Narendra Pradhan, Mr. Jhamak Karki, Mr. Shiva Raj Bhatta, Mr. Megh Bahadur Pande and Mr. Ramesh Thapa (Bardia) who generously provided information and data related rhino conservation in Nepal. Likewise, he would like to thank to Mr. Ganga Ram Singh, and Mr. Purna Kunwar of WWF Office Chitwan Sauraha who not only arranged the field visit in Chitwan and also provided data and regarding TAL. Hearty thanks to Mr. Ram Prit Yadav who shared his long experiences on rhino conservation in Chitwan as well as in Bardia. He would like to appreciate to the NTNC officials of Chitwan Mr. Ram Chandra Nepal and Mr. Harka Tamang, and NTNC official of Bardia Mr. Naresh Subedi who bigheartedly shared experiences and provided information on rhino conservation in Chitwan and Bardia. Last but not the least, he is thankful to Mr. Ashok Ojha, WTLCP Bardia for the information provided on transboundary meetings at local level and WTLCP contribution on rhino conservation.

Bijay Kumar Singh

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Abbreviations and Acronyms

APO	Anti-Poaching Operation
APU	Anti-Poaching Unit
APYAC	Anti-Poaching Youth Awareness Campaign
BCP	Bardia Conservation Project
BICP	Bardia Integrated Conservation Project
BNP	Bardia National Park
BZ	Buffer Zone
BZCF	Buffer Zone Community Forest
BZMC	Buffer Zone Management Committee
BZUG	Buffer Zone User Group
CARP	Critical Areas Restoration Plan
CBAPO	Community-Based Anti-Poaching Operation
CBD	Convention of Biodiversity
CBO	Community-Based Organization
CDO	Chief District Officer
CITES	Convention on International Trade for Endangered Species of Flora and Fauna
CNP	Chitwan National Park
DDC	District Development Committee
DFCC	District Forest Coordination Committee
DFO	District Forest Office/r
DOF	Department of Forest
ERBC	Ecoregion Based Conservation
GEF	Global Environmental Fund
ICIMOD	International Center for Integrated Mountain Development
IUCN	The International Conservation Union
Km	Kilometer
KMTNC	King Mahendra Trust for Nature Conservation
KWS	Katarniaghata Wildlife Sanctuary
LIBIRD	Local Initiatives for Biodiversity, Research and Development

MFSC	Ministry of Forest and Soil Conservation
MOU	Memorandum of Understanding
MTR	Mid-Term Review
NA	Nepal Army
NARC	Nepal Agriculture Research Council
NBS	Nepal Biodiversity Strategy
NBSIP	Nepal Biodiversity Strategy Implementation Plan
NEFEJ	Nepal Forum for Environmental Journalists
NP	National Park
NTFP	Non-Timber Forest Product
NTNC	National Trust for Nature Conservation
PAs	Protected Areas
RCNP	Royal Chitwan National Park
RNA	Royal Nepal Army
SCP	Suklaphanta Conservation Project
SNV	An NGO of the Netherlands
Sq.	Square
SWR	Suklaphanta Wildlife Reserve
TAL	Terai Arc Landscape
UNDP	United Nations Development Program
UNESCO	United Nations Education, Social and Cultural Organization
VDC	Village Development Committee
WR	Wildlife Reserve
WETTREC	Western Terai Tiger Rhino Elephant Conservation Project
WTLCP	Western Terai Landscape Complex Project
WWF	World Wildlife Fund

Table of Contents

Acknowledgements	i
Abbreviations and Acronyms	ii
Table of Contents	iv
1.0 Introduction.....	1
1.1 Background.....	1
1.2 Objectives.....	1
2.0 Methodology	2
3.0 Chronology of WWF Contribution in Rhino Conservation in Nepal.....	4
4.0 Implementation process and mechanism.....	8
5.0 Major Interventions	9
5.1 Rhino population management.....	9
5.2 Anti-poaching operation	11
5.3 Active protected area management	12
5.4 Research and monitoring	15
5.5 Policy works.....	15
5.6 WWF Nepal Institutional Support to the DNPWC	16
5.7 Human-wildlife conflict mitigation	17
5.8 Awareness generation and information dissemination.....	17
6.0 Successes and Achievements	20
7.0 Lessons Learnt	22
Bibliography	26

List of Tables

Table 1: Translocation of rhino	9
Table 2: Number of rhino individuals in different years	10

List of Annexes

Annex 1: Terms of Reference.....	28
Annex 2: Persons to meet during study.....	31

Contribution of WWF Nepal in Rhino Conservation: A Retrospective

1.0 Introduction

1.1 Background

WWF is a global conservation organization that acts locally through a network of offices in different nations to work for a living planet. It is an independent foundation registered under Swiss law and is governed by a Board of Trustees under an International President with its headquarters at Gland, Switzerland. Since its inception in 1961, WWF has worked to conserve nature and ecological processes through a combination of action on the ground, national and international advocacy work to establish appropriate policies and international campaigns to highlight and demonstrate solutions to crucial environmental problem. WWF has identified a set of global priorities for its work that cover six globally important issues: forest, species, climate change, freshwater, marine and toxics. These are allied to some of the most important places in the world for biodiversity conservation, termed as "ecoregions" where WWF applies its effort and support.

In Nepal, WWF Nepal office was established in Kathmandu in 1993. It implements all of its programs in collaboration with government, non-government organizations (NGOs) and community-based organizations, recognizing that effective and long-lasting conservation is possible only through working together, aiming to achieve long-term conservation that benefits local communities. Species conservation has been nitche of WWF ever since its inception since 1970s. WWF has been involved in conservation of large mammals like rhino, tiger and elephant in Terai Ecosystem. During 80-90's it was involved in integrated conservation and development project (ICDP) through the promulgation of Bardia Integrated Conservation Project including regular support for species conservation. Since dawn of new millennium and with the initiation of implementation terai Arc landscape (TAL) program, there has been implementing Critical Area Restoration Project (CARP) in the critical areas (corridors and bottlenecks) and protected areas of the TAL Nepal in partnership with the Department of National Parks and Wildlife Conservation (DNPWC) and the Department of Forest (DoF). CARP, now integrated into TAL Program, is a pioneering initiative of the Government of Nepal and WWF Nepal introducing this paradigm shift in conservation in Nepal.

For species conservation in particular, WWF has involved in conservation for large mammals such as rhino (here in after referred as rhino as species of special attention) for more than three and half decade. Rhino conservation in TAL Nepal is directly linked with social and economic well-being of TAL. For instance, tourism in Chitwan National Park is the direct function of rhino sightings. Given such an importance of rhinos, TAL program has adopted an integrated approach with multi-pronged interventions to address the conservation of rhino and social and economic upliftment in the program areas. In this regard, program, interventions range from policy works to active protected area management supports through translocation, rhino count and regular wildlife monitoring.

1.2 Objectives of the Study

The major objective was to document WWF Nepal's rhino conservation activities, achievements, successes and weaknesses over past decades (1970-2007).

Specific objectives of the assignments were:

1. to document context and historical chronology of rhino conservation in Nepal,

2. to record achievements (tangible conservation outcomes and successes of rhino conservation. (Supported by qualitative and quantitative information),
3. to document key lessons learnt weaknesses in the implementation of rhino conservation program,
4. to elaborate the mechanisms and strategies of the rhino conservation adopted at various times,
5. to explain the significance of rhino conservation and partnership building with perspective of landscape level conservation and maintenance of connectivity, and
6. to analyze the effectiveness of policies and strategies devised for rhino conservation.

2.0 Methodology

The collection and review of secondary source of information was main task to complete the assignment and its logically presentation. Accordingly, the following methods were applied to complete the assignment on "Contribution of WWF Nepal in Rhino Conservation - A Retrospective".

Preliminary discussions with WWF officials: After signing contract, as per the Terms of Reference (Annex 1), preliminary discussions were held with the WWF officials in Kathmandu both in group and individual basis.

Collection of information and review: Information related to rhino conservation were collected from different sources including WWF information center, ICIMOD, IUCN, the Department of National Parks and Wildlife Conservation, National Trust on Nature Conservation (NTNC) both at central and district level, Terai Arc Landscape Project (TAL), Western Terai Landscape Complex Project (WTLCP), the Department of Forests, Chitwan National Park, Bardia National Park and other sources as well.

Consultations: In order to get insights and also give the ownership of the report, consultations were held with the concerned stakeholders including the officials of Department of National Parks, WWF (Kathmandu, Nepalgunj, and Chitwan), Chitwan National Park, Bardia National Park, IUCN, WTLCP, the Department of Forests, National Trust on Nature Conservation - NTNC (Chitwan, Bardia and Kathmandu).

Presentation and discussions on methodology: The methodology of the study was presented to the WWF officials and Director General of the Department of National Parks and Wildlife Conservation. Comments and suggestions on methodology helped to refine the tools and techniques.

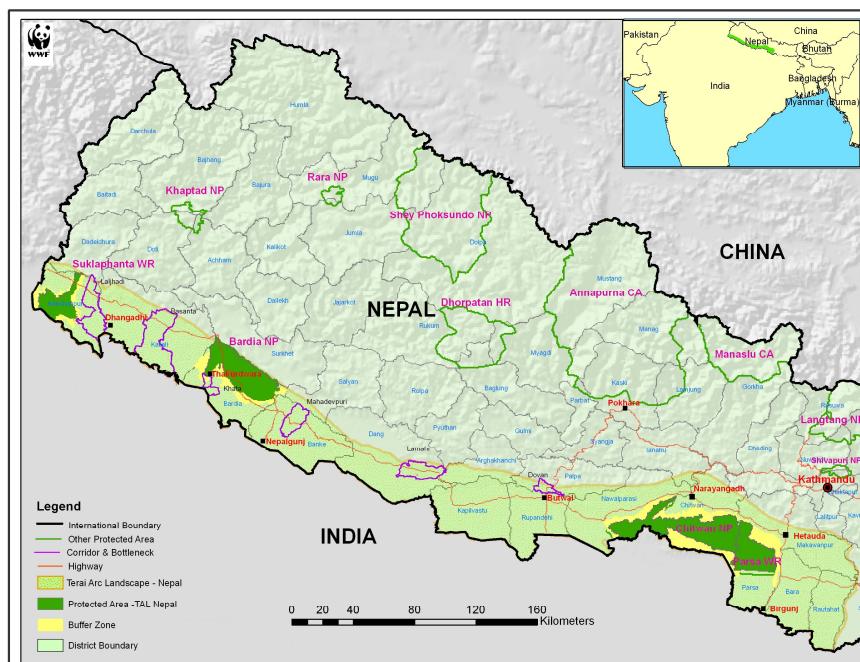
Checklist: Checklist was prepared for the discussions with WWF, NTNC, WTLCP and officials of the protected areas in Chitwan and Bardia.

Field visits: The consultant visited Bardia National Park and Chitwan National Park and met with the concerned officials of park authorities, NTNC, WTLCP and TAL officials.

Triangulations of information: Before writing report, the information from the different sources were triangulated including secondary sources and consultations/meetings.



Map: Locations of protected areas in Nepal having rhinos



3.0 Chronology of WWF Contribution in Rhino Conservation in Nepal

WWF's work in Nepal began with the conservation of Greater One-horned Rhinoceros and Bengal tigers in the late 1960s. Thus, rhino conservation has become a reference point for the conservation of wildlife both for the Department of National Park and Wildlife Conservation as well as WWF in Nepal. From the early emphasis on species conservation, WWF Nepal in recent years from 2001 has supported the Government of Nepal in adopting and promoting a landscape level approach to conservation for the long-term survival of large terrestrial wildlife and cohabitant species including rhino, tiger and elephants.

Chronology of WWF Contribution in Rhino Conservation in Nepal

Year & Month	Rhino conservation events	Contribution of WWF Nepal
1967	Rhino Sanctuary established in Chitwan	WWF provided technical and funding support to establish rhino sanctuary .
1971-73	Establishment of Chitwan National Park	WWF provided technical and funding support to establish Chitwan national parks which directly contributed in rhino conservation.
1975-78 & 1983	Conservation Education	WWF provided fund and technical assistance in preparing conservation education materials and strategy in order to give conservation education to reduce conflict between park and people living outside parks.
1985	Supported to King Mahendra Trust Nature Conservation program Workshop on national park management	WWF provided funding to the KMTNC for conservation education and also for conducting workshop on national park that indirectly contributed in effective conservation of mega-wildlife like rhino in Chitwan national park.
1986	Reintroduction of rhino in Royal Bardia Reserve	As per establishment second viable population of rhino, WWF provided funding support in reintroduction of 13 rhino (8 male and 5 female) in Royal Bardia Reserve.
1987	Community Forestry Program in CNP Support for Sauraha Research Station at CNP Production of education materials for radio broadcast	WWF provided technical support in the establishment of community forests outside national parks which is now called buffer zone community forests. Such BZCFs have become additional habitats for rhino conservation for example, Baghmara CF of Chitwan. WWF also funded for establishment of Research Station at Sauraha which supported in the study of habitat and research on rhino. WWF also supported in production of education materials for radio broadcast and rhino conservation was one of hot issues.
1987-89	Park/people conflict resolution in Royal Chitwan National Park	WWF also supported to the RCNP to reduce conflicts between park and local community and establish rapport relationship. Destruction of agricultural crops and harm to lives by wildlife including rhino of local people was one of reasons

		for conflicts.
1988	Rhino conservation and resource management in Royal Chitwan National Park	WWF also provided technical and funding support in resource management for RCNP.
1989	Sauraha/Chitwan Community Forestry Project, Royal Chitwan National Park Handbook Rhino Management Training Film on Park-People Interaction - RCNP	WWF funded for the community forestry in Chitwan Sauraha project mainly for establishment of plantation and preparation of operational parks for hand over. Similarly, an attractive RCNP handbook was published focusing on rhino. Moreover, a film on park-people interaction was produced of RCNP. Rhino management training was conducted to enhance the capacity of the park staff.
1991	Translocation of rhino in Royal Bardia National Park	WWF supported second time in translocation of 25 rhinos (8 male and 17 female) from Royal Chitwan National Park to Royal Bardia National Park.
1990-92	Conservation Program for Royal Bardia National Park	WWF funded for the implementation of Conservation Program for Royal Bardia National Park in which newly introduced rhino was central issue.
1993	Establishment of WWF Nepal Program in Kathmandu	Establishment of WWF Country office eased out to provide support in the conservation and management of national parks and key wildlife species.
1993-2008	Anti-Poaching Support	Anti-poaching program with Anti-poaching Units (APU) supported by WWF and NTNC to institutionalize the program.
1994	Workshop on CITES implementation Rhino count in Chitwan	WWF Nepal funded for the workshop to implementat CITES. Parts of rhino (mainly rhino horn) is one of listed item in Appendix I of CITES. In this year, WWF supported in first rhino counts in Chitwan and found 466 rhino population.
1996	Buffer Zone Regulation	WWF provided technical assistance in preparation of buffer zone regulation 1996.
1997	Buffer zone declared in Chitwan and Bardia	WWF provided technical support in preparation of buffer zone documents which was officially declared BZ in Chitwan and Bardia
1998	Grassland management workshop held in Bardia	WWF also funded for grassland management workshop held in Bardia National Park which was equally important for rhino conservation.
1999	Translocation of four rhino from and Sarlahi and RCNP to Royal Bardia National Park	WWF provided technical and funding support in capturing two rhino from Sarlahi and two rhino from Chitwan National Park and translocated to Royal Bardia National Park. This was the third support of WWF in rhino translocation.
2000	Nepal rhino count 2000 Translocation of rhino from	WWF supported in Second Rhino Count and found 612 rhino in the country including Chitwan and

	<p>Chitwan National Park to Bardia National Park and Suklaphanta Wildlife Reserve</p> <p>MOU between WWF Nepal & DOF for WETTREC Project</p>	<p>Bardia.</p> <p>WWF funded in translocation of rhinos from Chitwan National Park to two destinations namely 16 rhinos to Bardia National Park and 4 rhinos to Suklaphanta Wildlife Reserve, Kanchanpur. This was the forth support in rhino translocation.</p> <p>MoU signed by Department of Forests and WWF Nepal for joint implementation of Western Terai Tiger Rhino Elephant Conservation Project (WETTREC) – the first landscape-level project in Western Terai, Nepal.</p>
2001	<p>Rhino translocation from Chitwan National Park to Bardia</p> <p>Terai Arc Landscape (TAL) program initiated for 5 year period</p>	<p>WWF funded fifth times in translocation of 5 rhinos from Chitwan National Park to Bardia National Park</p> <p>WWF Nepal funded a long-term TAL Program and established its Program Office in Dhangadhi Kailali to conserve mega mammals namely rhino, tiger and elephant at landscape concept.</p> <p>Funding secured for TAL through World Bank-WWF Alliance.</p>
2002	Rhino translocation from Chitwan National Park to Bardia National Park	WWF funded sixth times in translocation of 10 rhinos from Chitwan National Park to Bardia National Park.
2003	Rhino translocation from Chitwan National Park to Bardia National Park	WWF funded seventh times in translocation of 10 rhinos from Chitwan National Park to Bardia National Park
2004	WTLCP Programs started	<p>Government approved TAL Strategic Plan: Broad Strategy Document.</p> <p>Western Terai Landscape Building Program (WTLBP) developed as front-loading mechanism for SNV's Western Terai Landscape Conservation Project (WTLCP).</p>
2005	<p>Rhino counts</p> <p>Prepared the Greater One-Horned Conservation Action Plan (2006-2011)</p> <p>Western Terai Landscape Complex Project (WTLCP) with partial funding from WWF along with other funding agencies</p>	<p>WWF funded in rhino counts and found total 446 rhinos in three locations namely Chitwan, Bardia and Suklaphanta (Kanchanpur)</p> <p>WWF funded to the DNPWC for the preparation of Rhino Conservation Action Plan (2006-11).</p> <p>WWF partially funded to the WTLCP which also implements the landscape corridor concept in three terai districts for 8 years (2005-2012).</p>
2006	<p>Mid-Term Evaluation of TAL Program</p> <p>Anti-poaching Unit (Strategy) for Chitwan National Park</p> <p>Action Plan for Transboundary Operation in TAL Nepal</p>	<p>Mid-Evaluation of TAL Program was done with the funding from WWF.</p> <p>WWF also provided technical and funding support in preparation of Anti-Poaching Strategy for Chitwan National Park.</p> <p>TAL prepared an Action Plan for Trans-boundary Operation in Western TAL, Nepal.</p>

		Government endorsed TAL Implementation Plan (2006-2011)
2007	Continued TAL 2nd Phase and WTLCP Program	TAL Second Phase operational in the project districts.
2008	Rhino counts	WWF funded in rhino counts and found total 435 rhinos in three locations namely Chitwan, Bardia and Suklaphanta (Kanchanpur)

4.0 Implementation process and mechanism

WWF Nepal have worked in close partnership with government, non-government organizations (NGOs) and community-based organizations, recognizing that effective and long-lasting conservation is possible only through working together.

Working with government: Since 1960s, the WWF is working with the government agencies mainly the Ministry of Forest and Soil Conservation (MFSC), Department of Forests (DoF). After the establishment of the Department of National Parks and Wildlife Conservation (DNPWC) at the end of 1980s, the WWF closely collaborated with these departments for example Terai Arc Landscape (TAL). At district or protected areas level, it works with the Chief Warden or Warden and District Forest Officers. In the protected areas, Chief Warden or Warden is the main partner whereas District Forest Officer (DFO) outside the protected areas particularly in present TAL strategy.

Working with local NGOs: With the establishment of King Mahendra Trust for Nature Conservation (KMTNC), presently National Trust for Nature Conservation (NTNC), WWF collaborated with this NGO in many events for nature conservation together with the Department of National Parks and Wildlife Conservation. For example, both collaborated with DNPWC in all 7 events of rhino translocations from Chitwan National Park to Bardia National Park and also Suklaphanta Wildlife Reserve and four events of rhino count in 1994, 2000, 2005 and 2008.

WWF Nepal also works with local NGOs to provide technical and expert services as well as private sectors that provide expert services such biogas services, solar energy services, marketing of goods and services produced by the conservation groups in the buffer zone areas.

Working with CBOs: TAL Program, funded by WWF Nepal, mainly works with community forest user groups, buffer zone groups/committee, council and other groups such as saving credit groups, women groups, community-based anti-poaching groups and so on. The Buffer Zone Regulation 1996 opened the door to work with the buffer zone groups, committee and councils and buffer zone community forest user groups and other income generation groups whereas TAL program also opened an additional avenue to work with community forest user groups outside protected areas for conservation of biodiversity including rhino.

Transboundary cooperation with neighboring countries: Since 1997, high ranking government officials and scientists from India and Nepal have met three times to discuss about mutual cooperation for wildlife conservation in the transboundary areas of the two countries mainly for mega-mammals namely rhino, tiger and elephants. As a follow-up program, local level a number of transboundary meetings have been undertaken in which officials of protected areas, Forest Officers and representatives of user groups of Nepal and India actively participated and discussed on local issues for wildlife conservation, illegal trade of wildlife parts and poaching and also forest products in the cross-border areas.

Coordination Mechanism: In order to get cooperation and coordination, the TAL also coordinates at district level District Forest Coordination Committee (DFCC).

Partnership with many other organizations: WWF Nepal has adopted partnership strategy and collaborated with Kathmandu University, Winrock International, Alternative Energy Promotion Center, DFID, ICIMOD, UNDP, Livelihoods and Forestry Program and SNV for different purposes to meet the objectives of the TAL program.

5.0 Major Interventions

5.1 Rhino population management

Rhino translocations

The main objective of the rhino translocation was to maintain a viable alternative population to protect from any natural and other disaster. A total of 87 rhinos, in 7 events, were translocated mainly from Chitwan to Bardia National Park (83 rhinos out of 87) and four rhinos in Suklaphanta Wildlife Reserve (SWR). Of the total 87 rhino translocated, 39 rhinos were male and 48 female (Table 1).



Rhino translocated for translocation

In Suklaphanta Wildlife Reserve, one male and three female rhinos were translocated. The WWF Nepal and NTNC, financially and technically, supported in all the events of rhino translocations to the Department of the National Parks and Wildlife

Conservation (DNPWC). All the translocations were safely undertaken without death of a single rhino. Similarly, the translocated rhinos have successfully bred new calves in new locations, which is an indicator of adaptation.

Table 1: Translocation of rhino

SN	Year	Sex		Total	Release location	Role of WWF Nepal
		M	F			
1	1986	8	5	13	Chitwan to BNP, Thakurdwara, Bardia	
2	1991	8	17	25	Chitwan to BNP, Babai valley, Bardia	
3	1999	2	0	2	Sarlahi to BNP, Babai valley, Bardia	
4	1999	2	0	2	Chitwan to BNP, Babai valley, Bardia	
5	2000	8	8	16	Chitwan to BNP, Babai valley, Bardia	
6	2000	1	3	4	Chitwan to SWR, Rani Tal, Kanchanpur	
7	2001	2	3	5	Chitwan to BNP, Babai valley, Bardia	
8	2002	5	5	10	Chitwan to BNP, Babai valley, Bardia	
9	2003	3	7	10	Chitwan to BNP, Babai valley,	

					Bardia	
Total		39	48	87		

Source: DNPWC, Annual Report 2002/003

Rhino counts

Table 2 illustrates the number of rhinos in different years. In 1994, for the first time, DNPWC in collaboration with the King Mahendra Trust for Nature Conservation and Resources Nepal supported by WWF Nepal launched a Count Rhino in CNP and estimated a maximum population size 466 individuals. Similarly, the DNPWC in collaboration with WWF Nepal and KMNTC counted a total of 612 rhinos in Nepal in 2000. In 2005, a rhino count program was conducted by the DNPWC in collaboration with WWF Nepal and KMNTC where 372 rhino were recorded in CNP and total 466 in Nepal (DNPWC/WWF, 2006). The latest rhino count was done in 2008 by the DNPWC in collaboration with WWF Nepal and NTNC and counted a total 435 rhinos in Nepal. Rhino counts were done four times in 1994, 2000, 2005 and 2008 and WWF Nepal collaborated in all these four events. Before official counts, the number of rhinos were estimated based on observations and other crude techniques. . The present trend after 1994 Count shows the increase number of 146 rhinos in 2000 (in six year period) but gradual decline of 166 rhino in 2005 and 11 rhinos in 2008 respectively chiefly due to illegal poaching both in core protected areas as well as in buffer zone.

Table 2: Number of rhino individuals in different years

Year	Population	Source	WWF Support in Rhino Count
1950	800	William	
1957	400	Stracey	
1959	300	Gee	
1966	100	Spillet & Tamang	
1968	108	Caughley & Mishra	
1972	147	Pelink & Uperti	
1978	310	Laurie	
1988	358	Dinerstein	
1994	466	Count rhino	WWF funding and technical support was provided in Rhino Counts in 1994, 2000, 2005 and 2008
2000	612	Count rhino	
2005	446	DNPWC	
2008	435	Count rhino	

Source, Dr. T. M. Maskey, Year ? quoted in Rhino Action Plan
2006-11 DNPWC/WWF Nepal, & Rhino Count 2008

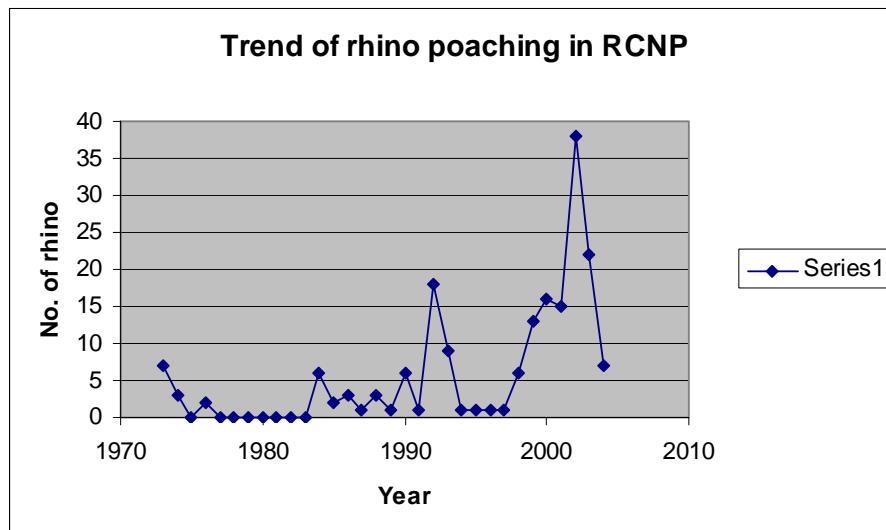
The rhino count 2005 at Chitwan NP found the population of rhino had dropped from 544 in 2000 to 372 i.e. 31 percent decline in five year. At least 94 rhino were lost to poaching and 66 to natural causes such as flooding, fighting, predation and age. The results of the Rhino Count 2005 caused a sensation in the conservation in the community. It sounded an alarm

regarding the existence of this endangered species in CNP. The heightened poaching has been attributed to the reduction in the number of anti-poaching posts, from 32 to eight due to Maoist insurgency that changed national security priorities, and restrictions on the movement of park staff due to the ground situation. Despite the setback of a reduction in the number of guard posts, anti-poaching operations backed by informant networks aided in the arrest of 77 poachers and their accomplices (TAL, 2006).

5.2 Anti-poaching operation

Community-Based Anti-Poaching Operations (CBAPO)

Rhino poaching was recorded the highest (42 rhinos) in 2004 due to acute insurgency problem and shrinkages of armed security posts from 34 to 10 locations. In order to protect rhino from poachers, the anti-poaching operation in 4 protected areas of Terai was initiated since 1992, there were 17 Anti-Poaching Units supported by WWF Nepal program prior to the TAL-CARP program. Operational collaboration was initiated between the Royal Nepal Army (the protection unit) and the civil staff of the protected areas. The TAL-CARP program has gone further in supporting/facilitating local communities to reduce poaching and illegal trade in protected area. The buffer zone has yet to provide a full proof protection shield against poacher (TAL MTR, 2006).



Source: Adopted from Bhatta, S. R, 2006 (Anti-Poaching Strategy for RCNP)

To control the illegal activities in the national forests through local initiatives, community-based anti-poaching operations (CBAPOs) have been supported by user groups or poaching supported by for Nature staff Ranger rewarded formed to wildlife. ITNC, organizations against



Valuable rhino horn for which it is poached.

poaching operations (CBAPOs) have institutionalized involving members of the user committees, park staff or DFO. Anti-poaching program with anti-poaching Units (APUs) supported by WWF Nepal and International Trust Fund for Nature Conservation (ITNC). The government organized to form APU and they are incentives for good work. The APUs were institutionalized the anti-poaching of KMNTPC and WWF are the main partner to support DNPWC in conserving rhino poaching. ITNC has been providing support for reward and partial support for information collection. Since its inception in early 1980s, KMTNC has been assisting in regular monitoring of rhino populations and their

habitats, reintroduction program, medication of wounded animals, anti-poaching initiatives and mobilization of local communities to create alternative habitats in the buffer zones area. Similarly, WWF Nepal regularly provides financial support to conservation and manage rhino since early 1980s. Necessary financial support for reintroduction programs, monitoring and habitat management being made available from WWF Nepal. Besides, WWF Nepal also provides necessary logistic supports (transportation, communication, field gears etc.) required for anti-poaching operations. Communication systems was in place with the generous support of WWF Nepal (Bhatta, 2006; TAL MTR, 2006).

5.3 Active protected area management

In 1999, a workshop on Grassland Ecology and Management of Protected Areas of Nepal was organized in Bardia to develop management strategies for alluvial grasslands and the alpine pastures. The funding support of WWF Nepal was instrumental for this workshop (DNPWC/WWF Nepal, 2000).

WWF Nepal also provided the funding and technical support for the preparations of first and the second Management Plans of Chitwan National Park 2001-2005 and 2006-11 respectively. Similarly, WWF Nepal also funded for preparation of Management Plan of

Bardia National Park, Royal Bardia National Park and Buffer Zone Tourism Plan (2001-2006) and the Greater One-horned Rhinoceros Conservation Action Plan for Nepal (2006-2011), and Terai Arc Landscape Strategic Plan (2004-2014).



Under active protected area management, WWF Nepal has provided technical and funding support for the habitat management of rhino and maintenance of grasslands to the protected areas. Similarly, funding are being provided for artificial construction and/or maintenance of roads, bridges and waterholes for dry season (TAL, 2006).

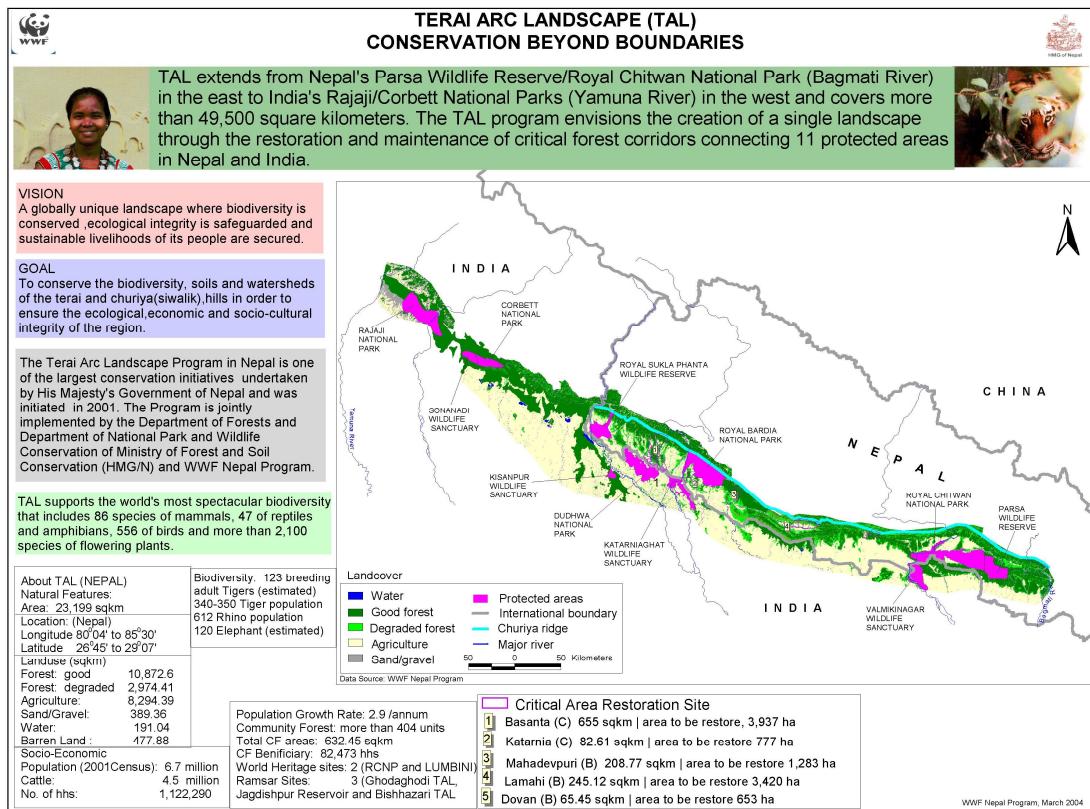
The threat of habitat loss due to invasion of alien invasive species on in the protected areas was also identified as a critical threat during the reporting period for rhino conservation as it Makinia species spreading very fast raiding ground cover in Chitwan national park and buffer zones (TAL, 2006).

WWF Nepal provided funding support in the extension of Bardia National Park to extend the natural habitat for the Bengal tiger and Greater One-horned Rhinoceros and several other species. The Project also promoted community development for biodiversity conservation.

WWF Nepal extended its funding support to Western Terai-Churia Conservation Program to preserve, restore and maintain habitat integrity and increase the land base that supports endangered wildlife species including tiger, rhino and elephant complex managing the Western-Churia Ecoregion through community based conservation. The WWF Nepal joined hands with the Department of Forests to restore and maintain the Churia foothill forests under this program.

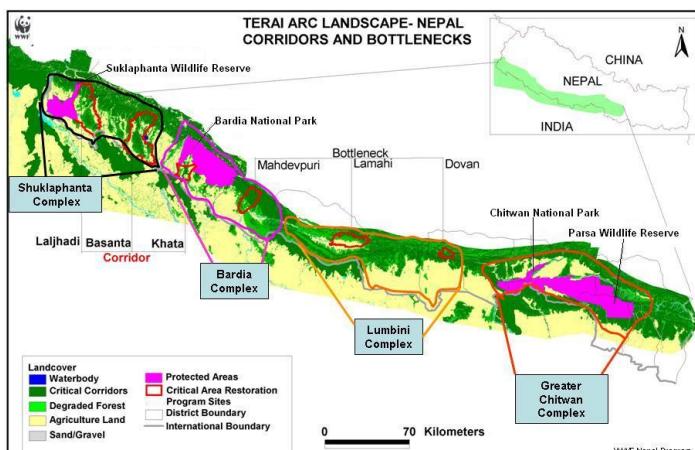
Terai Arc Landscape Program (2001-2006): The concept of Terai Arc Landscape Program was identified as one of the seven top priority landscapes at the WWF's Global Tiger Conservation Workshop held in Anyer, Java, Indonesia in 2000. The landscape includes 11 protected areas including Parsa Wildlife Reserve, Chitwan and Bardia National Parks and Suklaphanta Wildlife Reserves in Nepal and rest of 7 adjoining protected areas in India. The goal of the project is to protect the entire landscape of the Terai Arc Landscape that the last

remaining forests and grasslands offering potential habitats for tiger, rhino and elephants, and linking them with the adjacent Indian protected areas.



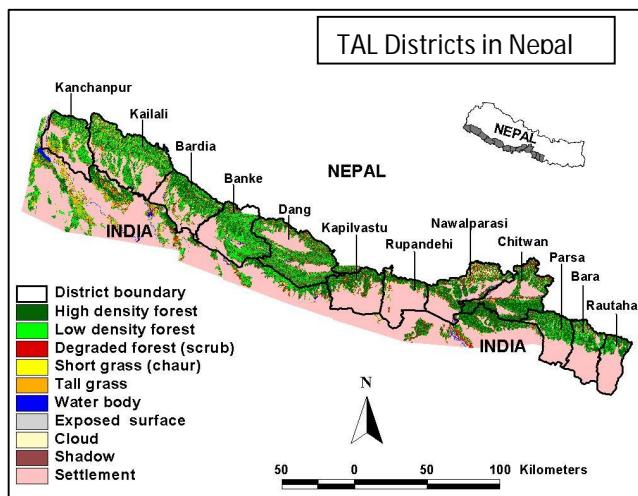
In 2001, WWF Nepal launched the Terai Arc Landscape (TAL) Program in collaboration with the MFSC, DNPWC, DoF and community-based organizations which aims to conserve the biodiversity, forests, soil and watersheds of Terai and Churia hills in order to ensure the ecological, economic and socio-cultural integrity of the region. TAL is a vast contiguous trans-boundary

conservation landscape extending across 11 protected areas in Nepal and India. The TAL vision endorsed by the Government of Nepal aims at the creation of a single functioning landscape through the restoration and maintenance of forest corridors and connectivity between protected areas in two countries. Spread over 49,500 Sq.km., linking 11 trans-boundary protected areas across



Nepal and India, TAL is home to flagship¹ species like the Asiatic wild elephants, rhinos and tigers. In Nepal, TAL encompasses 23,129 sq. km. of 14 districts including 75 percent of the remaining forests of lowland Nepal including Churia hills and four protected areas. This landscape has the second largest population of rhinos and one of the highest densities of tiger populations in the world. TAL covers three Ramsar Sites (Bishhazari Tal, Jagdishpur Reservoir and Ghodghodi Tal), and two World Heritage Sites (Chitwan National Park and Lumbini - the sacred birthplace of the Lord Buddha). This is the priority program of the Government of Nepal of Tenth Plan. It comprises two of WWF's Global 200 ecoregions namely, the **Terai-Duar Savannas and Grasslands Ecoregion** and the **Himalayan Sub-tropical Broadleaf Forest Ecoregion**. There are four protected areas namely: Parsa Wildlife Reserve, Chitwan National Park, Bardia National Park and Suklaphanta Wildlife Reserve. It is one of the major trans-boundary cooperation initiatives in conservation between Nepal and India. In 2000, based on the analysis of satellite images and socioeconomic data and their field verification, five critical areas - two corridors (Basanta in Kailali district and Khata in Bardia district), and three bottlenecks (Mahadevipur in Banke, Lamahi in Dang and Dovan in Palpa districts) were identified. The Khata corridor connects Bardia National Park (BNP) in Nepal with Katarniaghata Wildlife Sanctuary (KWS) in India. This is the only corridor that connects BNP and KWS and allows free movement of elephants, tigers and rhinos (TAL, 2005).

TAL- Nepal program initiated in 2001 with the implementation of Critical Areas Restoration Plan (CARP) through WWF support. TAL-CARP is an ecoregion based program zooming spatially on the most urgent and critical areas and rooted on the concept of integration of conservation and development. TAL strategy has been adopted by the Western Terai Landscape Complex Project (WTLCP). TAL-CARP is focused on protected areas and protected species of wildlife. Grassland management, maintaining / creating waterholes and wetlands have contributed to maintain ungulate population. Of the targeted, 16.4% degraded forests have been restored. Maintenance/improvement of roads within protected area has facilitated in regular movement of park guards which contributed in monitoring work. Support in anti-poaching operation is one of the successful programs of WWF to DNPWC. Anti-poaching network has been effectively extended to reach outside protected areas through 12 sites of CBAPOs. Anti-poaching trainings have been organized for park staff, protection unit army personnel, and to members of BZCFUGs and youth in BZ areas. TAL has also provided support DNPWC in the implementation of CITES. It has provided technical and financial support to the DNPWC in translocation rhino in order to establish two viable populations and rhino counts (TAL, 2006).



Western Terai Landscape Complex Project (2005): Western Terai Landscape Complex Project (WTLCP), with a partial funding of WWF Nepal, is an 8 year long project (2005-2012) aiming to achieve vision of landscape level conservation in Nepal. It is stretched from Bardia

¹ **Flagship species** - popular, charismatic species that serve as symbols and rallying points to stimulate conservation awareness and action are referred as "flagship species" (www.wwfnepal.org)

National Park in the east to Suklaphanta Wildlife Reserve in the west covering three districts namely Bardia, Kailali and Kanchanpur. This is a joint initiative of Government of Nepal and seven national and international organizations namely: MFSC, SNV Nepal, WWF Nepal, NARC, LIBIRD, UNDP, GEF, Biodiversity International and Landscape level consideration, a new paradigm in conservation arena, is crafted to address the issue of expanding the human needs and their pressure on the ecosystem. In this initiation, conservation is extended beyond the boundary of protected areas to cover larger landscape of different land-use patterns. The WTLCP works together with TAL program to reinforce conservation initiatives in three corridors namely: Khata corridor of Bardia, Basanta corridor of Kailali and Laljhadi corridor of Kanchanpur districts (WTLCP, 2007).

Basanta corridor² connects India's Dudhwa National Park in the south and Nepal's Churia forest in the north. Similarly, the Khata corridor connects Bardia National Park in Nepal with Katarniaghata Wildlife Sanctuary in India. The Laljhadi corridor on the otherhand connects Nepal's Churia forests in the north to India's Dudhwa National Park in the south.

The project's landscape approach envisions integrated ecosystem management to achieve the multiple objectives of conservation, sustainable natural resource management and poverty alleviation by reorientation biodiversity management approaches and its institutional arrangements. The project has been designed to address major biodiversity threats of agriculture encroachment and squatting in forestlands; high grazing pressure in the forests; overexploitation of forest resources; and replacement of traditional agricultural crop varieties and landraces with modern cultivars.

5.4 Research and monitoring

Between 1967 and 1984, the WWF focus was on research of endangered Greater One-horned Rhinoceros, Bengal tiger and various valuable and endangered plant species. Presently, WWF Nepal also provides "Small Grants Program" aiming to responding to immediate conservation needs such as anti-poaching, ecotourism, habitat management and action research. The general objectives of the grants are to provide support to local scientist, conservationists and university students to conduct small scale research programs to address urgent needs; project conservation values, and for advancement of established methods and WWF mission (DNPWC/WWF Nepal, 2000).

WWF Nepal has provided funding support to the Nepal Forum for Environmental Journalists (NEFEJ) for the Wildlife Trade Monitoring Program which complements the activities related to CITES in Nepal.

WWF Nepal closely worked with Natural History Museum and the Central Department of Geography of Tribhuvan University in relation to the effective implementation of CITES.

5.5 Policy works

The WWF Nepal Office has been continuously playing a catalytic role in providing forum for policy makers to discuss on conservation issues such as poaching and illegal trade in endangered wildlife species, wildlife damage, cross-border wildlife movement and transboundary conservation (DNPWC/WWF Nepal, 2000). Since 1997, high ranking government officials and scientists from India and Nepal have met three times to discuss

² **Corridor** is an area of natural habitat, which includes forests, grasslands or other natural terrestrial habitats that contain the ecological conditions necessary for potential wildlife movement (WWF Nepal, 2004)

about mutual cooperation for wildlife conservation in the transboundary areas of the two countries. Activities related to transboundary cooperation have facilitated meetings and exchanges and contributed to the establishment of communication at both government and community levels. Field level meetings have been instrumental in the practical demonstration of the implications of the TAL vision. Bilateral meetings have facilitated actions with respects to poaching and illegal trade. Field level impacts may vary, but the impression is that the Nepal side has been more responsive than the Indian side (TAL MTR, 2006).

WWF Nepal Program has identified and adopted the program goals particularly in the areas of ecoregional management; transboundary conservation, maintenance of wildlife corridors, conservation of keystone species and their habitats including rhino.

Under the Conservation Policy Initiative Program, the WWF Nepal has provided support in strengthening an institutional framework of the conservation organizations in Nepal. It helped the MFSC and DNPWC to develop an archive on conservation treaties, and conventions such as CITES, CBD, climate change; build the capacity of CITES authorities on policy implementation.

TAL-WWF supported the development and publication of two important policy documents for the Terai Arc Landscape–Nepal program namely: (i) Terai Arc Landscape–Nepal Strategic Plan (2004-2014), Broad Strategy Document (*published in 2004*), and (ii) Terai Arc Landscape–Nepal Implementation Plan (2004-2014) (*published in 2006*). Both plans have been endorsed by the Ministry of Forests and Soil Conservation and adopted by the Government of Nepal. The Terai Arc Landscape–Nepal program is also identified as a priority program in the Tenth Five-Year Plan.

5.6 WWF Nepal Institutional Support to the DNPWC

WWF Nepal provides institutional support to DNPWC to facilitate the effective implementation of conservation activities in Nepal's protected areas. The support ranges from office equipment to staff training and higher education, and from anti-poaching operations to rhino census and translocation. The support also includes the promotion of cooperation between Nepal, India and China for trans-border conservation to deter poaching and illegal trade in endangered wildlife species and their product out of which parts of rhino and tigers are on top rank.

Through WTLCP, TAL-WWF supported formation and institutionalization of three District Forest Coordination Committees (DFCCs): i) Kanchanpur DFCC, ii) Kailali DFCC, and iii) Bardia DFCC. The formation process was guided by the DFCC Directives – a policy document that provides guidance for establishing and operating DFCCs, whose main function is to strengthen coordination at the district level (TAL, 2006).

Subsequent to WTLBP, TAL-WWF provided support for institutional capacity-building to 15 coordinating institutions in the landscape: 3 Buffer Zone Management Committees (BZMCs), 10 Community Forest Coordination Committees (CFCCs), 1 Private Forest Coordination Committee (PFCC), and 1 NGO – Padampur Development Concern Society. TAL-WWF provided technical and financial support to these institutions, while individual capacity was built through training such as leadership, book-keeping, gender sensitization, and biodiversity conservation among others (TAL, 2006).

These institutions play a significant role in the implementation of TAL-WWF activities in the field. Collectively, these coordinating institutions administer a network of 834 user groups representing 59,796 households in the landscape. Among the 10 CFCCs, TAL-WWF was instrumental in the formation of 9 CFCCs (all excluding Lamahi CFCC); while support for

CFCC institutionalization was provided to all 10 committees. CFCCs are coordinating bodies that administer CFUG programs in the corridors and bottlenecks of the landscape. Each CFCC is registered as an NGO with its respective District Administration Office (DAO). They provide support for the planning, implementation, and monitoring of CFUG activities. In addition to supporting conservation-related projects, CFCCs also play a vital role in the implementation of sustainable livelihood programs, e.g. by providing micro-credit schemes for biogas construction and income-generating activities (TAL, 2006).

5.7 Human-wildlife conflict mitigation

WWF Nepal has funded in the implementation of Bardia Integrated Conservation Project (BICP) to conserve plants and wildlife in the park and to reduce poverty in the buffer zone communities. WWF Nepal joined hands with DNPWC as well as national and local NGOs to implement the project and contribute to reduce human-wildlife conflict (WWF Nepal, 2006). The Park and People Project, funded by UNDP and implemented in Bardia National Park, complemented WWF's Bardia Integrated Conservation Project in the buffer zone of National Park. WWF Nepal provided support to the KMNTC for the implementation of community development and agroforestry component of the BICP in Bardia which also helped in relaxing conflict between park and local communities.

DNPWC and WWF jointly worked in buffer zone program to eliminate conflict between protected areas and local communities. The objective is to make local people self-reliant in forest resources such as firewood, fodder, medicinal plants, timber and non-timber forest products. Both TAL and WTLCP provide funding and technical support to the local communities in adopting alternative energy such as biogas, improved cooking stoves, solar panel, bio-briquettes to reduce pressure on protected areas.

Biogas Village: A "Biogas Village" in Sauraha Chitwan is an example. Badreni Village, Bachhaui-1, Chitwan is developed as a biogas village with the support of TAL. It was installed biogas in 80% of 82 household of that community; settled by indigenous people and the village is surrounded by forests at three sides and a river on the fourth side resulting to high level of people-wildlife conflict and high risk of flood during summer. All of the households were used to go to the national park for fuel wood and fodder collection, which is stopped after the installation of bio gas plants in the village.



5.8 Awareness generation and information dissemination

After the Rhino Count Campaign" in the occasion Day, at The theme was hflfcf}Ps l; u] pain that all therefore, unite in the objective of the encourage and act



discouraging results of 2005, "Save the Rhino kicked off on 22 May 2005, of International Biodiversity Meghuli in the BZ of CNP. "p:t} kflf p:t} lk8f, ldn] uPf" which emphasizes the living creatures suffer and encourages everyone to saving the rhinos. The main awareness program was to local communities to voice collectively against poaching

of the rhino in and around CNP. The target audience of the week long "Save the Rhino Campaign" was local communities, media person, students, district level government officials and businessmen. Events included a door-to-door campaign among indigenous communities, discussions with buffer zone user committees, a speech completion focused on rhino conservation, media trip for journalists and interaction (TAL, 2006).

Between 1967 and 1984, the WWF also supported in dissemination of valuable environmental knowledge, public awareness, and capacity building of NGOs such as the King Mahendra Trust for Nature Conservation. The second phase of evolution of WWF's involvement was between 1985 and 1992 when it introduced concept of Integrated Conservation and Development Program. The Chitwan Community Forestry Program, capacity building, Small Grant Programs, NGO workshops, and dissemination of promotional materials and messages were other notable activities for the period (DNPWC/WWF Nepal, 2000).

The third phase of WWF's involvement in Nepal began with the establishment of field office in 1993. Traditional species conservation was still at priority. The integrated projects of WWF focused on capacity building for conservation partners and local communities, strengthening of park management, community-based resource management in buffer zones and conservation education through environmental education and Eco-Clubs in schools. The aim of the eco-club is to create a "conservation network" of selected schools in the region, where environmental awareness is raised among students, and where they are motivated to participate in conservation actions. The project motivates teachers and students to take part in environmental activities, increase conservation awareness, produce "Green Gifts" and promote exchange ideas through interactions (DNPWC/WWF Nepal, 2000).

TAL program has provided support to DNPWC to organize training/workshops on CITES which has benefited a range of stakeholders including management staff and the scientific community. A number of booklets, booklets, pamphlets and posters have been published for the wider distribution (TAL MTR, 2006). WWF Nepal has also supported in preparation of a guideline and reference materials on CITES implementation and promote public awareness on CITES and other conventions and treaties. A booklet (Nepali booklet) on Implementation of CITES: Introduction and Identification was jointly published by the DNPWC & WWF for Nepali readers is an example.

WWF Nepal has provided funding support to the Nepal Forum for Environmental Journalists (NEFEJ) to strengthen wildlife watch activities by providing training to journalists and creating a communication mechanism for the preparation and dissemination of awareness materials.

WWF Nepal also collaborated with Ministry of Environment, Science and Technology to raise environmental awareness in the country.

WWF Nepal closely worked with Natural History Museum and the Central Department of Geography of Tribhuvan University in Mobile Education Program and organizing "Environmental Day Exhibitions to generate awareness of the importance of nature conservation.

Landscape: a system of patches, corridors, and matrix – it is a larger area where the implications of past, existing and future land-use practices can be understood.

Corridor: an area of natural habitat that facilitates movement of organisms between habitat fragments.

Bottleneck: part of a habitat narrowed or constricted by external threats.

Connectivity: the measure of how connected or spatially continuous a corridor, network, or matrix is.

Matrix: background ecological system of a landscape with a high degree of connectivity.

Network: an interconnected system of corridors.

TAL-WWF implements an effective communications system to generate awareness on the linkages between conservation and sustainable livelihoods, and to also increase awareness on the Terai Arc Landscape program and its purpose. Various communication tools have been employed in this respect (TAL, 2006):

- **TAL media kit.** A film on the Terai Arc Landscape was produced in 2001 and disseminated widely among various stakeholders. The film depicted the purpose of the Terai Arc Landscape program, as well as its vision and goal. An accompanying fact book and audio cassettes were also produced and disseminated.
- **Kael Pahura:** Translating to “Green Gift”, *Kael Pahura* is a quarterly newsletter that highlights achievements and implications of TAL-WWF program activities. 15 issues of *Kael Pahura* have been printed and disseminated to various stakeholders within and outside the landscape.
- **Bhu-Paridhi.** This radio program was initially a fortnightly production that was forecast from Surkhet and Bharatpur from 2002-2004. Due to its immense popularity, the program has been broadcasted on a weekly basis since 2004 from regional radio stations in Surkhet, Bharatpur, Butwal and Nepalganj. The program is implemented in both Nepali and Tharu languages. In response to this radio program, over 100 Listeners’ Clubs have been voluntarily formed in the landscape.

6.0 Successes and Achievements

WWF Nepal in partnering with MFSC, DNPWC and other agencies, with its vision and mission, is successful in establishing ecoregion based conservation (ERBC³) in Nepal which contributed to reach overall conservation mission of conservation biodiversity and ecological processes with following reasons (i) it provides a clear vision essential for a successful outcome, (ii) large scale yields larger impacts, (iii) ecoregions are more powerful unit for conservation strategy and action, (iv) ERBC can establish better linkages between policies and actions, and between/among PAs, and (v) it is based on step-wise planning such as reconnaissance is followed by biodiversity vision, ecoregional conservation plan and programs.

One of the success indicators of the rhino conservation is the significant growth of the rhino population from below 100 individuals in Chitwan valleys in the 1970s to a total of 612 in 2000 and presently 435 in 2008.

Second and third viable population of rhino has been established which has over twenty individuals (rhino) in Bardia National Park and six individuals in Suklaphanta Wildlife Reserve.

The community forestry coordination committee (CFCC) has been an innovative mechanism contributing to realize the Integrated Community Development Program (ICDP) intervention at field level. Impacts are visible as signs of forest regeneration through regeneration as well as private plantations as newly established corridors. Corridors are being used by wild elephants and rhinoceros for transboundary movements (TAL, MTR, 2006).

Anti-poaching operation is one of the most successful program supports of WWF Nepal to DNPWC. The anti-poaching network has effectively extended to reach outside protected areas through 12 sites of CBAPOs. Poaching weapons and traps, illegal possession of tiger and rhino bones and horns, timber and other forest products have been confiscated through the support of local youth. A number of notorious poachers have been arrested. Anti-poaching trainings have been organized for park staff, protection unit army personnel, and to members of BZCFUGs and other CFUGs. The APOs and CBAPOs are totally dependent upon project support. Therefore, the problem of sustainability of long-term sustainability has to be seriously thought (TAL MTR, 2006).

A Gift to the Earth is a public celebration by WWF of a conservation action by a government, company, organization, or individual, which is both a demonstration of environmental leadership and a globally significant contribution to the protection of the living world. The Gift is symbolic, and is WWF's highest accolade for applauding large scale conservation gains.

Nepal's Gifts to the Earth:

Nov 2000: (Government Gift) Extension of Royal Bardia National Park.

Monitoring of Greater One-horned Rhinoceros, tigers, and ungulates has become effective and needs to be continued as program component of PAs. Separate monitoring teams, one for PAs and another for areas outside the PA, has proven effective. The involvement of local

³ Ecoregion based conservation (ERBC) is a new approach in biodiversity conservation which aims to conserve the full range of species, natural communities, habitats and ecological processes. The key feature of ERBC is the clear articulation of a biodiversity vision that incorporates the full range of biological features including current distribution and stud, need for restoration, and ways of safeguarding them. A major difference in comparison with conventional methods of conservation is the emphasis on areas outside PAs as well as transboundary areas, covering rather large areas. Thus, there are possibilities of linking the PAs within a country and the trans-border PARs between countries. ERBC is far more ambitious than traditional approach because of long time-frame (a 20-30 year horizon), diverse partnership, and collaboration.

people in ungulate monitoring has been very innovative. BZ communities and APO networks especially those of CBAPOs are building up the needed social capital for effective anti-poaching (TAL MTR, 2006).

Operation and implementation modality of the TAL-CARP from the project perspective has been successful. The front loading implementation of the WTLCP in association with TAL-CARP can be seen as a result of this success. The management process is well-established, goal oriented and workable. The management system is project focused rather than system focused. Decision-making is decentralized and consensual and there is high degree of ownership of the TAL program by the project staff and the CBOs. There is adequate degree of accountability of local partners and the system of public audit has ensured the transparency. The present implementation modality is essentially ad hoc and the key issue of institutionalization of long-term vision such as TAL-CARP in this context of decentralization needs to be addressed (TAL MTR, 2006).

Program support to DNPWC to strengthen its capacity to abide with international compliance of CITES has been very significant (TAL MTR, 2006).

Protected areas in Nepal are major tourist destinations. Tourism contributes significantly to revenue generation in the country. Chitwan National Park is central tourist hub for tourist to enjoy seeing Greater One-horned Rhinoceros. In 2006/07, a total of 80,630 tourists visited in Chitwan National Park and the park earned 47.73 million rupees in this fiscal year (DNPWC, 2007).

7.0 Lessons Learnt

Protection measures

Lesson learning from the Babai valley for rhino conservation: Considering high potentiality of habitat, a total of 70 rhinos were translocated in Babai river valley of Bardia district between 1991 to 2003. Few rhinos also gave birth of new babies. During Rhino Count (2008), not a single rhino could be traced out in Babai valley indicating total wipe out of all the rhinos (Maskey, 2007; rhino count, 2008). Insurgency situation was blamed for the killing of all the rhinos in Babai valley without taking any moral responsibility by the Nepal Army and/or park staff so far. It seems there was lack of **contingency protection measures/plan** during insurgency period. Such insurgency may come any time in future. Hence, there must be a minimum contingency protection measure/plan for insurgency period.

Translocation of rhino onward 2000 during peak insurgency period: Insurgency situation was on peak between 2000 and 2004 but the 45 rhinos were translocated between 2000 and 2003. There was rhino monitoring system after translocation but sufficient protection measures were not adopted after translocation of rhino, on the contrary, the number of guard posts were drastically reduced. Thus, not only the biological requirement but the social protection measures are equally important for valuable flagship species like rhino.

Urgency of national strategy on trans-boundary: A government level trans-boundary meeting was held in 1997 and 2008 between Nepal and India. Similarly, local level trans-boundary meetings between local authorities were also organized in mid- and far western terai regions and India (WTLCP, 2007 and WTLCP, 2008). However, there is no national policy or strategy on trans-boundary nor memorandum of understanding (MOU) and/or agreement between Nepal and India which can facilitate for organizing regular trans-boundary meetings.

International cooperation to curb the illegal trading of the rhino horns: Rhino horns is not consumed in Nepal rather it is illegally traded said to be Chinese market for medicinal purposes. As per CITES, rhino as banned items for trading, it may require international cooperation to curb illegal trading.

International market may be the driving force for the high rate of rhino poaching: The price of rhino horn is estimated US\$ 40,000 to US\$ 60,000 per kg. Thus, international illegal market may be driving force for creating demand of rhino horn and killing rhino for its horn. Allured by substantial incentives in poor country like Nepal, the poachers do not hesitate to kill the innocent rhino for its horn. Despite of strict legal provisions and physical and strategic protection measures of flagship species, the rhinos and tigers have been continuously poached. Hence, there is a strong need to review the intelligence system for rhino and tiger conservation. The park intelligence alone may or may not be sufficient to curb rhino and tiger poaching initiatives. Hence, institutionalization of coordination and cooperation with national intelligence system of policy, army and the Department of Intelligence should be taken into considerations in this regard.

Low morale of park staff: During the discussions, the park officials do not hesitate to put forward that after advent of democracy prevailed in 1990s, low morale of government staff is one of the reasons to take prompt action for curbing wildlife poaching. The reward and punishment system is not properly enforced which may be one of the main reasons for the low morale of park staff.

Anti-poaching momentum after putting park staff in jail: In 2006, a crime convicted individual belonging to a local *Tharu* community died in Bharatpur hospital in Chitwan while in custody with park authorities. It was charged as a murder case and local people violently ran against the park authorities. District Administration of Chitwan arrested the Chief Warden, Assistant Warden and his Ranger. The Ministry of Forest and Soil Conservation suspended the trio from their job under certain pressure. The seven-month long imprisonment of officials widely demoralized park staff and paralyzed anti-poaching operations (Maskey, 2007).

Another shock wave to the conservation community was initiated by the government when the council of ministers ordered to release 15 wildlife crime convicted persons waiving their remaining jail term on grounds of their improved character. Ironically, some of them went back to poaching business and were arrested red handed (Maskey, 2007). Some verdicts by the Chief Warden were also controversial who decided to impose minimum punishment to notorious rhino poachers (a record confession of 20 rhino horns in one operation).

The incentive to the anti-poaching unit has also been suspended. Thus, it has been realized that anti-poaching momentum has been eroded.

Increasing number of rhino horns in store and question of its protection: Either by natural death or by killing of rhino, number of rhino horns are increasing which also raised its risks. These horns are kept at Kasara headquarter which are collected from the protected areas. Similarly, rhino horns collected outside PAs are kept at Tikauli armed guard center. The high prices of rhino horn and increasing number of such horns have raised the risks and responsibility of the government staff that are responsible for its protection. This is a high time to make a national strategy for its disposal considering CITES provision.

Technical

Rate of habitat improvement: During the discussions with staff of PAs, and TAL, WTLCP, NTNC officials, it was said that the natural habitat of rhino is shrinking and degrading due to increased number of trees and regenerations and invasion of alien invasive species. The pace of habitat improvement is far behind compared to required amount of areas to be improved with the technical and funding support of WWF and other agencies. This may be one of the reasons that rhinos travelled out of park in the private lands during night in search of food.

Individual identity of each rhino: Presently, there are less than 500 rhinos in Nepal. Records of individual rhino have not been maintained. This may be quite expensive and difficult task. However, the life history of an individual rhino is not known yet.

Invasive Floral Species:

Habitat integrity in Chitwan National Park and Parsa Wildlife Reserve is being threatened by invasive floral species such as Banmara and Makenia species. A serious scientific inquiry into the ecology and bio-control of these species must be made before it is too late.

Institutional

Terms of reference of park staff and army personnel and enforcement of reward and punishment system: During the field visit, question was violently raised on terms of reference of park staff and army personnel for the protection of rhino and reward and punishment system if rhino is poached.

Priority ? compensation for affected person/household injured by wildlife or community development: Both the park staff and affected persons/ household from the wildlife have raised the questions on priority for compensation or community development. Maximum amount, the buffer zone committee receive as 30-50% from the revenue of the protected area, is spent on community development such as road/trail construction/maintenance etc. Only a small amount is allocated for the compensation of person/households killed or affected by wildlife. The community developments do not compensate to the households and/or persons who are affected or harmed by the wildlife and spend the paralyzed life. Such affected persons/ household have violent feeling against wildlife protection and conservation.

No strategy and laws on leasehold forestry for poor in the buffer zone area: In Makwanpur district, leasehold forests for poor were handed over to the leasehold groups for forty year period but buffer zone of Parsa Wildlife Reserve and Chitwan National Park was declared later. There is no provision in the Buffer Zone Regulation on what to do with leasehold forest. The leasehold group members as well as PA staff hesitate to do any activities in the leasehold forest area which are directly affecting to the poor households for them leasehold forest was a source of income and livelihoods.

Sustainability of source of relief and/or compensation fund: The funding agencies or project provide small amount of fund for relief of the persons/household who are harmed or affected by the wildlife. Adjoining buffer zone persons/households are frequently affected by the wildlife, hence, there is a need to be a regular source of fund other than relief fund from the short period of the projects.

Sustainability of habitat improvement or other development and/or maintenance works in the core protected area: The government budget allocation for habitat improvement or other development works is very low. The 30-50% of budget allocated from the revenue of the PAs is largely spent on community development in the buffer zone areas. The prime question is sustainable source of habitat improvement and other development inside the core protected areas. The dependency on external funding may not be sustainable after termination of the project.

Sustainability of anti-poaching operations: Anti-poaching operations encompass many aspects such incentives to the informer/intelligence, cost of sweeping operation or camping inside the PAs and many operational costs which is presently borne by the different projects with external fundings. The government allocation is very low in such anti-poaching operations. Thus, sustainability of anti-poaching operation should be explored on time.

Lessons in TAL Program: Key lessons from the TAL program experience, which are equally important for rhino conservation, include: (a) there is a great advantage of participatory planning and capacity build-up of CBOs; (b) there is a necessity to integrate conservation and livelihood issues at the household level; (c) there is a need to recognize that success in conservation exacerbates human-wildlife conflict; (d) it has recognized the merits of building strategic partnerships; (e) and there is a need to develop a long-term viable institutional arrangement for implementation (TAL MTR, 2006).

Prioritizing Human-Wildlife Conflict: Development and implementation of a Human-Wildlife Conflict Strategy is crucial to ensuring continued success of the Terai Arc Landscape Program among local communities. Poor households are more vulnerable to loss of life and property (both physical and agricultural) from such human-wildlife conflicts, thus such a strategy should appropriately address these vulnerabilities.

Transboundary Cooperation: Biodiversity knows no political boundaries, thus transboundary cooperation is key to the success of the Terai Arc Landscape program.

Enhanced coordination between Nepal and India must be achieved in the fields of research, information-sharing, monitoring, and implementation of community-level projects.

Strategic Partnerships: Niche specializations and expertise of organizations – both government, as well as non-government – are crucial for developing effective partnerships in order to successfully implement programs at the landscape-level.

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Annex 1: Terms of Reference

Statement of Work for

The Preparation of Retrospective Report on Rhino Conservation in Terai Arc Landscape, Nepal

Background

Species conservation has been nitche of WWF ever since its inception since 1970s. WWF has been involved in conservation of large mammals like rhino, tiger and elephant in Terai Ecosystem. During 80-90's it was involved in integrated conservation and development project (ICDP) through the promulgation of Bardia Integrated Conservation Project including regular support for species conservation. Since dawn of new millennium and with the initiation of implementation terai Arc landscape (TAL) program, there has been implementing Critical Area Restoration Project (CARP) in the critical areas (corridors and bottlenecks) and protected areas of the TAL Nepal in partnership with the Department of National Parks and Wildlife Conservation (DNPWC) and the Department of Forest (DoF). CARP, now integrated into TAL Program, is a pioneering imitative of the Government of Nepal and WWF Nepal introducing this paradigm shift in conservation in Nepal. The major aim of TAL program is to conserve the threatened biodiversity of the landscape and secure sustainable livelihoods of its people. In addition, TAL program envisions to maintain and promote connectivity of critical habitats for conserving meta population of ironic species including rhino, tiger and elephants.

For species conservation in particular, WWF has involved in conservation for large mammals such as rhino (here in after referred as rhino as species of special attention) for more than three and half decade. Rhino conservation in TAL Nepal is directly linked with social and economic well-being of TAL. For instance, tourism in Chitwan National Park is the direct function of rhino sightings. Given such an importance of rhinos, TAL program has adopted an integrated approach with multi-pronged interventions to address the conservation of rhino and social and economic upliftment in the program areas. In this regard, program, interventions range from policy woks to active protected area management supports through translocation, rhino count and regular wildlife monitoring.

Rationale

With reference to the entire implementation of TAL Program, WWF has experienced several successes, achievements and failures as well as in the conservation of rhinos. Rhino conservation has passed through several development stages, changes and adaptations in the past. At this stage, it has become essential to document all the development stages of various achievements, lesson learnt and experiences as regards to Rhino Conservation Initiatives. Comprehensive documentation of the rhino conservation efforts accomplished during the past three and half decades will serve to build up institutional memory of the implementing organization. The institutional memory related to program implementation and rhino conservation will further provide insight for adapting management in the days to come. In addition, documentation will facilitate to share experiences, successes and lessons learnt to the appropriate and concerned audiences. Therefore, this assignment for the preparation of "**Rhino Conservation in Nepal - A Retrospective**" is driven by these felt needs.

Objectives of the Assignment

The major objective of this assignment is to document WWF's rhino conservation activities, achievements, successes and weaknesses over the past decades (1970-2007). The document needs to be a thorough analytical exercise and should be of a standard quality to present to concerned audiences ranging from donor communities to partners and experts. Specific objectives of the assignments are as follows:

1. to document context and historical chronology of rhino conservation initiatives in Nepal.
2. to record achievements (tangible conservation outcomes), and successes of rhino conservation (must be supported by qualitative (narrative) and quantitative information,

3. to document key lessons learned weaknesses in the implementation of rhino conservation program,
4. to elaborate the mechanism and strategies of the rhino conservation adopted in various times.
5. to explain the significance of rhino conservation and partnership building with perspective of landscape level conservation and maintenance of connectivity.
6. to analyze the effectiveness of policies and strategies devised for rhino conservation.

Methodology

Preparation of the retrospective report will be largely based on extracting information from secondary sources such as technical progress reports, research reports, policy documents and related published and unpublished documents. Other methods such as consultation with key and relevant personnel, experts, community leaders and conservationists, government officials, and any other people directly or indirectly involved in rhino conservation in field. A few case studies will be conducted through a separate assignment to other consultants which can contribute to this assignment. For this, the consultants need to coordinate through designated technical director including CSP WWF US of these consultancies.

Information Collection

Both qualitative and quantitative information will be obtained from secondary sources such as periodic progress reports. WWF's central database will also provide quantitative data of progresses and achievements. A database created by TAL retrospective include TAL Phase I evaluation report will also be used for information gathering. The entire project document and other relevant research/study works will provide substantial information required for the retrospective report. Moreover, information pertaining to subject matter will be gathered from different partners and associated line-agencies.

Evaluation will also provide information, insights and basis for documentation for documenting the project's live in terms of impact, effectiveness, successes and shortcomings. This evaluation will also provide insight for analyzing the program implementation process and mechanism.

Semi-structured interviews will be carried out with the project team leaders and key persons in program management in WWF Nepal, partners for documenting history and developmental stages and conservation successes. With the recent times, consultant will visit the selected sites in TAL to gain the idea of implementation on the ground, field situation and issues due to rhino conservation. The TAL program management will recommend sites for field visit.

The Consultant will discuss with the Technical Officer about the methodologies and consult with relevant WWF Staff including direct communication with Conservation Science Program, WWF US, Dr. Wickranmanayake for guidance and consultation towards the output delivery.

Deskwork

After collection of required information, intensive desk work will be carried out in Kathmandu for report writing and designing.

More detailed methodologies for this consultancy will be discussed and sketched after awarding the consultancy. The consultant is required to discuss the table of contents of the report at the beginning of the assignment.

Expected Outputs

1. A retrospective report on Rhino Conservation in Nepal including the report should include following information (not limited to this)
2. Context and history of WWF's supports and involvement in rhino conservation in Nepal

3. Implementation process and mechanism
4. Major interventions
 - a. Rhino population management as translocation
 - b. Anti-poaching operation
 - c. Active protected area management (protected area infrastructures and habitat management, protected area management plans)
 - d. Research and monitoring
 - e. Policy works
 - f. Human-wildlife mitigation
 - g. Awareness generation and information dissemination such as campaigns
5. Successes and achievements
6. Lessons learnt
7. Success stories (boxes)
8. Graphs and charts, table etc.
9. Photographic illustrations
10. Maps
11. Annexes

Deliverables

- Agreed table of contents of the report by 20 March 2008
- Draft report for comments and review by 20 May 2008
- Final report by 30 May 2008

Effective number of days for the consultant: Ten (10) effective days from 1st April to 30 May 2008.

Annex 2: Persons to meet during study

Name	Address/office
Mr. Santosh Nepal	WWF Kathmandu
Mr. Kanchan Thapa	WWF Nepalgunj
Mr. Rajendra Gurung	WWF Nepalgunj
Mr. Dhan Rai	WWF Nepalgunj
Dr. Diwaker Chapagain	WWF Kathmandu
Dr. Eric Wickramanayake	WWF, US
Dr. Narendra Pradhan	DNPWC
Mr. Shiv Raj Bhatta	DNPWC
Mr. Ramesh Thapa	Ranger, Bardia NP
Mr. Megh Nath Kafle	AFO, MFSC
Mr. Jhamak Karki	DNPWC
Mr. Harka Tamang	WWF Chitwan
Mr. Ram Prit Yadav	WWF Chitwan
Mr. Ganga Ram Singh	WWF Chitwan
Mr. Purna Kunwar	TAL Chitwan
Mr. Ram Prit Yadav	TAL Chitwan
Mr. Megh B. Pande	CNP Chitwan
Mr. Naresh Subedi	NTNC, Bardia
Mr. Ram Chandra Nepal	NTNC, Sauraha
Mr. Ashok Ojha	WLTCP, Bardia